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PRUNING THE PEAR TREE.

THERE is no end to the questions put to us on this subject. In these days, when every proprietor, from a half acre and upwards is interested in the culture of the pear, either as a grower for the market, or as possessing some half dozen pets which he tends for his own gratification, there is a constant inquiry as to "how shall I prune?" "what is the best shape for a pear tree?" "is there danger in pruning a young tree too severely?" "at what season should pruning be done?" and a host of like pertinent questions. Most of the books in our language which treat on Horticulture, give, or pretend to give, some instruction on the subject; but it is a very difficult subject to bring home to the comprehension of the amateur. It is a branch of knowledge acquired only by considerable experience and practice; and in fact it is a rare thing to find either among our nurserymen, professed gardeners, or amateurs, one who is thoroughly posted in this particular.—Every one prunes, and every one thinks he knows how to prune, but beyond doubt there is a great deal of very bad pruning, and a want of proper knowledge is the rule, the exceptions so rare as to give abundant proof thereof.

For the purpose then of answering these many inquiries, and to give a standard article of instruction on the subject, we have thought best to refer to a writer whose reputation as authority stands very high, and who gives his instruction with more detail and perspicuity than any other within our knowledge. We have taken the liberty of translating and appropriating bodily from the work of M. A. Du Breuil, entitled "Cours Elementaire D'Aboriculture," a chapter on the pruning of the pear, and particularly the "pyramidal pruning," which, in his judgment, as also in our own humble one, is the shape best suited to the pear tree.*

* The cuts illustrating this article we have at considerable expense, and with great care re-engraved from the originals in the work above-named.

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Fig. 447.

PRUNING OF THE PEAR IN THE PROPER PYRAMID SHAPE.

It must be borne in mind in the first place, that the flower buds of the pear only appear on the least vigorous parts of the tree; that they start directly from the principal ramifications, or from vigorous branches which have been mutilated, on shoots, or in fine, on little spurs; that these rarely fruit during the year which follows that of their formation; that they do fruit sometimes in two years, but usually in the third year; that at first the flower bud is placed at the extremity of a little support which is successively lengthened, and which takes the name of *lambourde*,* (fig. 465);

Fig. 465.—*Lambourde.*

that this lambourde at first simple, branches after the fruiting of the primitive bud, and that it can thus yield annually, and for an indefinite time new fruit, provided it is not allowed to become exhausted by over fruiting, or by the diversion of the sap to other parts of the tree.

It is a great point then while giving shape to the tree, at the same time to force the developement of these lambourdes of which we have just spoken, throughout the extent of each of the branches, and to make sure of the alimentation of the lambourdes by a sufficiency of sap; to prevent in short the development of useless growth, which would cause a confusion, and absorb a part of the sap which should go only to the formation of the structure and the fruit branches. This much premised, let us make application of the same to the formation of a pear tree into a pyramid.

One rarely meets in the nurseries with young trees well suited to form pyramids. You find either grafts of a year old, often too weak to receive a first pruning, (fig. 467) or else grafts of two or three years old, which show at their base none of those

* *Lambourde.*—We have no word answering exactly to this, and as it is used technically throughout the article, we prefer to keep to the original.

branches indispensable to commence the formation of these trees (fig. 468).

When you have but to choose between these two sorts, it is best to give the preference to grafts of one year; the stalks less hardened towards their base will develope more readily the necessary buds.

FIG. 467.—*First Pruning.*

After having planted them with the care which we have elsewhere prescribed, avoid giving to these trees a first pruning during the same year of their planting; wait until the following year. This first pruning would have the effect to deprive them of a number of branches, and in consequence, of the buds which they carry; and the mass of leaves which they might have developed would thus be greatly diminished. The roots would then develop less, would take less hold in the soil, and the final result would be, that the shoots, the growth of which you desire to promote by this pruning, would be weak, puny and little adapted to commence with the structure of the tree.

In waiting, on the contrary, to the following year, the tree will have become rooted anew. If now, you suppress a large portion of the branches, the sap, abundantly supplied by the roots, will react with force on the evolution of the buds reserved, and you will obtain during the first summer longer shoots than you would have in two years by following the first mode of operating. You thus find yourself placed under much more favorable circumstances to give to the structure a proper shape, and you gain time besides.

Nevertheless, if the roots of the young trees were injured to any degree, you should shorten in the branches in proportion to the mutilation the roots have undergone, so as to maintain an equilibrium between them and the trunk. The same shortening in should be practised, in case the young trees should present any very long branches, which offering full play to the wind, would shake the roots and prevent them taking proper hold; but it is readily seen that these shortenings are very different in their effects from those of a first pruning.

These observations equally apply not only to the pear tree subjected to other shapes, but in fact to all other fruit trees, with the exception of the peach.

First pruning.—This operation which is the same for grafts of one or two years old, and for young trees badly shaped in the nursery, consists in cutting the trunk at about 0m. 60* from the ground, at A, (figs. 467, 468).

FIG. 468.—*First Pruning for young trees badly formed.*

The object of this pruning is to induce the appearance of vigorous buds, destined to form the first ramifications from the base of the pyramid.

* The French metre is equivalent to 39.38091 U. S. inches, this would be somewhere in the neighborhood of 24 inches from the ground—we reduce to inches the other measurements given.

These ramifications to the number of six or eight, should be at equal distances from the top, to within about 12 inches from the ground. If you preserve a greater number you would have to draw them in more by shortening, and the little branches which would start from them, would not permit the light, indispensible to the fruit to penetrate to the centre of the tree.

The terminal bud is destined for the prolongation of the stalk. You should always choose it from the side opposite to that on which the graft was inserted in the stock, in order to dress this stalk as much as possible. It has been recently proposed to obtain the side branches of pyramids by means of notches cut each year immediately above the buds of the successive prolongations of the main stalk.

It is thought by this means to avoid the yearly suppression of a certain extent of the prolongation, to force the development of all the buds, and thus to hasten the formation of the structure, in obtaining at once a large number of lateral branches.—But the quantity of sap which flows into these prolongations is insufficient to cause all the buds they carry to develop into sufficiently vigorous branches.

In these prolongations left to themselves, you see, in fact, only the five or six neighboring buds at the top develop at all. If then you should notch all the buds of these prolongations not pruned, you would only force the sap to distribute its action equally among them. They would all develop; but instead of having five or six vigorous well formed branches, as when these prolongations are properly shortened, you will have fifteen or twenty little trifling ramifications, weak and perfectly useless for the purposes of principal branches.

After then, that the main stalk has been cut back, as we have just said, and during the following summer, the greater number of the buds it carries, and even the *latent buds* develop with vigor, especially those placed near the top. When the started buds have attained a length of 4 to 4½ inches, which will be at about the beginning of June, you must put in practice the process of *disbudding* and *pinching*.—You will suppress all the buds from the ground up to 12 inches on the main stalk. As to the others above this point, you will preserve six or eight of the best disposed, that is to say, those placed most regularly at equal distances. The terminal bud is kept in a vertical position by means of a little prop fastened to the stalk as in fig. 469.

Fig. 469.—*Second Pruning.*

If, as it sometimes happens among the *latent buds*, several shoot from the same point, you should keep but one. The shoots which these buds would produce would result in a confusion; and moreover if you wished to make branches of any of them, you would sooner or later find one become more vigorous than another.

In short you should watch with the greatest care that the lateral shoots preserve among themselves an equal degree of vigor. If one among them presents a disproportioned growth, pinch off its herbaceous extremity so as to retard its vegetation.

During the first, and sometimes during the second summer which follows the first pruning, the lateral shoots push with so much vigor, that they twist themselves on all sides. It is necessary then to insure them a right direction, by fastening them to

stakes driven obliquely into the ground at the foot of the tree. The lateral buds which develop directly from the annual prolongations of the tree, take of themselves the proper direction.

Second pruning.—After these attentions the tree will present the appearance exactly as seen in figure 469.

In treating of nurseries, we have expressed the desire of seeing the practice prevail, (as yet very rare) of giving to the young graft a shape in conformity with its intended form. We have indicated that which trees intended for the pyramidal shape should have. It is in all respects that of figure 467. When you are fortunate enough to fall in with such trees, you should not hesitate to give them the preference, for you will by so doing, gain a year in their formation. After being planted a year, these trees might be mistaken for those to which we have just given the first pruning, and receive with them the second pruning.

This second pruning consists in cutting off the *leader* at about 16 inches from its starting point, at A, (fig. 469). This pruning is intended in the same way to induce the development of branches disposed like the first ones. If you should leave this leader without shortening, only the buds at the top would start; there would result in consequence a considerable space between the base and the new branches.

You choose for the prolongation of the main stalk, a bud placed on the side opposite to that of the preceding year. This condition should be complied with in each successive pruning, in order to keep the trunk of the tree in its entire length,—a vertical line.

The lateral branches are cut at the point indicated in our figure. You allow them as much length as possible, in order to favor their growth.

Sometimes this length should be such as to induce the development of all the buds situated on these branches.

If you leave them too long a certain number of the buds remain dormant, and this will produce a gap among the branches. If you cut them too short, the buds develop too vigorously to be readily transformed into fruit branches. The bud to which you cut on the lateral branches should be on the outside of the tree, in order that the branch which springs from it should follow naturally the oblique ascending line described by each branch starting from the trunk. If you choose the opposite bud on the inside, the shoot would have a vertical direction, and form an angle with the branch which bears it. There is no exception to this general rule, unless in cases where a branch is too close to its neighbors on the right or left. To cause it to deviate then from its direction, you chose as a terminal bud, a lateral bud placed on the side where you wish to direct the branch.

The remainder of the article will be found in our next number.—Eds.

LACKLAND'S GARDENER.

With his grounds laid out and his house in fairly habitable condition—according to the plans already laid before the reader—Lackland holds various consultations in regard to a proper gardener—consults, as in duty bound, first of all, Mrs. Lackland.

Mrs. Lackland wishes an industrious, sober man, who will keep the walks neat and tidy, who knows enough of flowers not to hoe up any of her choice annuals, whose seeds she dots about in all directions, marking the places with fragments of twigs thrust in at all possible angles; she wishes moreover a good-natured man, who shall be willing to come and pot a flower for her at a moment's notice; one who will not forget

the sweet marjorum or the sage, and who will not allow the thyme to die in the winter.

He consults the city seedsmen, who refer him to a half-dozen of stout men who may be lounging upon the barrels in the front of their sales-room on almost any fine morning in April; but, on entering into parley with them, he is so confounded with their talk about ranges, and pits, and bottom heat, and pelargoniums and orchids, that he withdraws in disgust.

He consults the newspapers, where he finds a considerable array of "steady, capable men, willing to make themselves useful upon a gentleman's place"; he communicates with some two or three of the most promising advertisers, and arranges for an interview with them. Lackland has great faith, like almost all the men I ever met, in his study of physiognomy. About a man's temper or his honesty, he can hardly be mistaken, he thinks, if he can once set eyes upon him. He is therefore strongly disposed in favor of a stout, jolly faced Irishman who assures him he can grow as good "vigitables as enny man in Ameriky."

"And flowers, Patrick (Patrick O'Donohue is his name), you could take care of the flowers?"

"Oh, flowers, and begorra, yis, sir—roses, pinks, vi'lets—roses—whativer you wish, sir."

"And, Patrick, you could harness a horse sometimes if it were necessary."

"Horses, and indade, yis, sir; ye may jist say, I'm at home in a stable, sir."

"And the poultry, Patrick, you could look after the poultry, couldn't you?"

"And indade, sir, that's what I can; there's niver a man in the counthry can make hens lay as I can make 'em lay."

In short, Lackland bargains with Patrick, and reports him at the home-quarters "a perfect jewel of a man."

The best of implements are provided, and a great stock of garden seeds—the choice of the latter being determined on after family consultation, in which all the vegetables ever heard of by either party to the counsel have been added to the list. If a man have a garden why not enjoy all that a garden can produce? Egg plants, and okra, and globe artichokes, and salsify, and white Naples radishes, and Brussels sprouts. The seeds of all these are handed over to the willing Patrick, who, as Mrs. Lackland impressively enumerates the different labels (Patrick not being competent to reading of fine print, as he freely confesses), repeats after her, "Naples radish, yis, m'am; artichokes, yis, m'am; okra, y'is, m'am."

Lackland provides frames and glass for the early salads he covets so much, and Patrick, with the fresh sweepings of the stables, has presently a bed all a-steam. At the mere sight of it the Lacklands regale themselves with thoughts of crisp radishes, and the mammoth purple fruit of the egg-plants. The seeds are all put in—early cabbage, cauliflower, peppers, radishes—under the same frame by the judicious O'Donohue. The cabbages and the radishes come forward with a jump. Their expedition forms a pleasant theme for the physiological meditation of Lackland. He is delighted with the stable manure, with the cabbage seed, and with the O'Donohue. He is inclined to think disrespectfully of the seed of peppers and of egg-plants in the comparison. But the bland O'Donohue says, "We must give 'em a little more hate."

And after some three or four days, Lackland is stupified, on one of his visits to his hot bed, to find all his fine radishes and cabbages fairly wilted away; there is nothing left of them but a few sun-blackened stumps; the peppers and egg-plants show no signs of germination.

"What does all this mean?" says Lackland; "the cabbages are dead, Patrick."

"Yis, sir—it's the hate, sir. The sun is very strong here, sir; we must give 'em a little more air, sir."

And they get the air—get the air (by a little forgetfulness on the part of Patrick) night as well as day; the peppers and egg-

plants, after a fortnight more of expectation, do not appear.

"How's this, Patrick? no start yet."

"And are ye sure the seed's good, sir?'

"It's all Thorburn's seed."

"Then, of course, it *ought* to be good, sir; but, ye see, there's a dale o' chatery now-a-days, sir."

In short, Lackland's man Patrick is a good-natured blunder-head, who knows no better than to submit his young cauliflowers, and peppers, to the same atmospheric conditions in the forcing frame. The result is that Lackland buys his first salads in the market, and his first peas in the market, and his first beets in the market. All these creep along very slowly under Patrick's supervision, and the onion seed is fairly past hope, being buried too deep for the sun to have any influence upon its germinating properties.

"But how is this," says the long-suffering Lackland, at last, "our neighbors are all before us, Patrick?"

"Well, sir, it's me opinion that the land is a bit cowld, sir. Wait till July, sir, and you'll see vigitables."

And Patrick grubs away with a great deal of misdirected energy—slicing off, in the heat of his endeavor, two or three of Mrs. Lackland's choicest rocket larkspurs; whereupon that lady comes down upon him with some zeal.

"Larkspur! and that's a larkspur, is it, m'am (scratching his head reflectingly)? and, begorra, I niver once thought 'twas a larkspur. Pity, pity; and so it was, indade, a larkspur? Well, well, but it's lucky it wa'nt a rose-bush, m'am."

And yet the good-natured blunder-head in the shape of a gardener is far more endurable, to one thoroughly interested in country life, than the surly fellow who, if he gives you early vegetables, resents a suggestion, and who will take a pride in making any particular scheme of the proprietor miscarry by a studied neglect of its details.

Upon the whole, I should lay down as sound advice for any one who, like Lackland, is beginning to establish for himself a home in the country that shall be completly enjoyable, the following rules with respect to the pursuit and employment of a gardener.

First, if your notion of country enjoyment is limited by thought of a good place where you may lie down under the trees, and frolic with your children, or smoke a pipe under your vine or clambering rose-tree at evening—find a gardener who is thoroughly taught, and who can place upon your table every day the freshest and crispest of the vegetables and fruits of the season, leaving you no care, but the care of bills for superphosphates and trenching. If you stroll into his domain of the garden, take your walking-stick or your pipe there, if you choose—but never a hoe or a pruning knife. Joke with him, if you like, but never advise him. Take measure of his fitness by the fruits he puts upon your table, the order of your grounds, and the total of your bills. If these are satisfactory—keep him: if not, discharge him, as you would a lawyer who managed your case badly, or a doctor who bled or purged you to a sad state of depletion.

If, on the other hand, in establishing a country home, you have a wish to identify yourself with its growth into fertility and comeliness, in such sort that you may feel that every growing shrub is a little companion for you and yours—every vine a friend—every patch of herbs, of vegetables, or of flowers, an aid to the common weal and pleasures of home, in which you take, and will never cease to take, a personal interest and pride—if all this be true, and you have as good as three hours a day to devote to personal superintendence—then, by all means, forswear all gardeners who come to you with great recommendations of their proficiency. However just these may be, all their accomplishments, ten to one, will be only a grievance to you. It is far better, if you be really in earnest to taste ruralities to the full, to find some

honest, industrious fellow—not unwilling to be taught—who will lend a cheerful hand to your efforts to work out the problem of life in the country for yourself.

You will blunder; but in such event you will enjoy the blunders. You will burn your young cabbages, but you will know better another year. Your first grafts will fail, but you will find out why they fail. You will put too much guano to your sweet corn, but you will have a pungent agricultural fact made clear to you. You will leave your turnips and beets standing too thickly in the rows; but you will learn by the best of teaching—never to do so again. You will buy all manner of fertilizing nostrums,—and of this it may require a year or two to cure you. You will believe in every new grape, or strawberry,—and of this it may require many years to cure you. You will put faith, at the first, in all the horticultural advices you find in the newspapers, —and of this you will speedily be cured.

In short, whoever is serious about this matter of taking a home in the country (if his rural taste be a native sentiment, and not a whim), should abjure the presence of a surly master in the shape of a gardener, who can tell him how the Duke of Buccleugh (or any other) managed such matters.

God manages all of nature's growth and bloom in such way, that every earnest man with an observant eye can so far trace the laws of His Providence, as to insure to himself a harvest of fruit, or grain, or flowers. And whatever errors may be made are only so many instructors, to teach, and to quicken love by their lesson.

Let us not then despair of our friend Lackland, though his cabbages are burnt and his beets are behind the time. I shall visit him again, and trust that I may find his verbenas and lilies in bloom, though his larkspurs have been cut down.

Edgewood, June 2d, 1865.

HINTS TO ORNAMENTAL PLANTERS.

BY. A. D. G.

If one may judge from his own experience, more is often learned by careful attention to "hints" in gardening than from elaborate treatises on the subject. The hint is generally the result of experience or observation, and suggests something really useful. Many who read the ponderous octavos of Loudon, and Mackintosh and Downing, get only general principles from their study; but when they mingle with intelligent gardeners, or visit fine country places, they get ideas which can at once be reduced to practice. The hints to beginners, which the pages of the Horticulturist have so often presented to their readers, constitute some of its most valuable matter.

—It is a mistaken notion that a lawn should be *large*. If of great extent, it lacks simplicity and home-likeness. It should be a cozy nook rather than a broad, open expanse. A large extent of surface is expensive to make and keep, and can hardly be maintained in that perfect order which is one of the great charms of a lawn. It should be large enough to show a few fine trees to advantage—their masses of foliage floating in the air, and their shadows stretching across the velvet turf; large enough for a wavy belt of shrubs on its borders, and running out, here and there, into the grass; large enough for children to romp and roll over it; but not large enough for a grove of trees to be planted upon it, nor for the review of a regiment of soldiers. It should be just large enough for the owner to keep it entirely free from weeds, its grass

smoothly shaven and rolled, and its walks and flower-beds (if it contain them) in complete order.

If the planter have a large surface at command, which he wishes to devote to grass, let him convert it into two lawns of moderate size. These should be partially screened from each other by rambling lines of shrubs and low trees. Walks may be laid through this shrubbery to connect the two scenes. While there should be nothing in the one lawn designedly to suggest the other, yet no harm will be done if the bays and recesses in the surrounding foliage, and occasional glimpses of smooth turf beyond, suggest to the visitor that the domain is of large extent, and that the sources of his gratification will not soon be exhausted. Thus variety of scene will be secured, curiosity be stimulated and pleasantly rewarded. That the two lawns should differ in size, outline and arrangement need hardly be added.

— The *expression* of a lawn is a matter of some consequence. Beginners are apt to give it a look of smartness. They dot it over with new-fangled trees, or crowd it with vases and statuary, or arbors, rustic seats and rock-work, or they throw it into jolting terraces, or cut it up into flower-beds in arabesque patterns. We have in our mind's eye a lawn of moderate dimensions in which there are six cast iron vases, two lions, four dogs, four female figures representing the Seasons, besides several other works in terra-cotta. This is the classical run mad. On the same street is another lawn, much smaller, in which a great number of the new weeping trees are huddled together. This is nature made awry, and the distortion makes the beholder uncomfortable. A single specimen of these oddities may sometimes be set on the side of a lawn, for variety, and just to show what nature and art can do "on a bender," but more than one is too many.

The best expression of a lawn is that of repose; not, indeed, the repose of an unkempt meadow, but of grounds over which the hand of taste presides, and easily fashions into beauty. There should be nothing to suggest the thought of labor and cost in the making and keeping of the lawn, or of desire to attract attention and make a display. It should suggest ideas of comfort, of rest from care and toil, of freedom from excitement and hurry, of self-contained enjoyment. With this expression, the oddly shaped trees, the superabundance of statuary and the glitter of flower beds somewhat conflict. A vase or figure rightly set produces a fine effect. If flowers are admitted into the lawn, it should be sparingly, and they should be constant bloomers. The flower-garden proper should be disposed in a scene by itself, somewhat secluded, and of large or small extent, according to the taste of the proprietor.

— The *outlook* of a lawn should be well considered; for, however pleasant one's own grounds may be, their charm will be heightened by glimpses of the world beyond. But beautiful scenery—hill, wood, stream, and purple mountains—becomes still more beautiful if it bears some marks of relation to man. The landscape artist, while giving us a view of nature in her wildness, knows that he adds a higher expression to his canvass if he gives it also some token of human life, such as the smoke curling up from a distant cottage, or a sail upon a sheet of water, a church spire rising above the woods.

Let the rural improver bear this in mind. While "planting out" offensive objects, he should be careful not to hide all the living scenes in his landscape. So, too, if one builds his house upon a wooded site, where the improvements are to be made as much with the axe as the spade, let him open vistas so as to bring in those objects which address the heart's finer sentiments, and so associate nature with humanity.

And here let us digress a little to say we see one reason why the purchaser of a "finished" place often feels little interest in it at first, but generally finds that interest increasing from year to year. He must needs *do* something to the place, must think

about it, dream about it, work upon it, alter it, add to it, and in various ways mingle his own personality with it, before his affections will twine about it, and he will really love it as his own home. This brings in the human element, adds fragrance to the flowers, grace and majesty to the trees, and sweetness to the very soil.

— Finally—if the writer of these "hints" is not assuming too much authority—let him caution small planters against *attempting too much.* Landscape gardening in a door-yard often verges upon the ridiculous. The proprietor, having read the standard authors, or visited a few large country residences, is seized with the rural fever, and determines to try his hand at improving his own place. He forthwith draws up a plan, with its winding walks and roads, its summer-houses, pines, oaks, magnolias, flower-patches, and what not. Large packages of trees and shrubs and vines are ordered from the nursery, and groups and masses and screens are set out all in a grand way. The work looks very fine to the owner; but to any discerning eye that stops to forecast the future, the little plat looks crowded and overburdened before it is half planted. A few years roll by, and how does the place look to everybody? It is one great confused mass of foliage, the trees overgrowing each other, and killing out the grass and shrubs beneath. Even the planter himself is dissatisfied, and wishes he had never meddled with landscape gardening.

The obvious lesson from cases like this is that in small places only a few trees should be planted. These should be set along the boundaries, near the gates, and at wide intervals over the surface. Calculate their spread for twenty years or more to come, and plant accordingly. It is often said, we are aware, that trees may be set close together at first for immediate effect, with the design of removing a portion of them when they become crowded. This is all very well if that intention is faithfully carried out; but in most cases it is not. The owner dislikes to cut down the trees which he has planted, or he neglects to do so until they have grown up tall and gaunt, like those of a forest. If a man plants trees close together, for immediate effect, intending to take out a part of them in a few years, the only safe way is for him to bind himself to his neighbors to forfeit a large sum of money or to be sent to the Insane Asylum in case he neglects to do it!

In place of numerous large trees in small grounds, how much better to plant, in part, with low trees and shrubs. The number and variety of these last is greater than many suppose; and hardly less artistic skill can be shown in their arrangement than in the disposition of trees. The effect, too, in its way, is equally pleasing. They can be set as single specimens on the lawn, or be grouped in masses of varied outline, height and color.

But whatever be the mode adopted of planting small grounds, let not the work be overdone. A smooth carpet of grass, a few choice trees and shrubs, a knot or two of flowers, and all in high keeping, will commend themselves to every eye.

COOL TREATMENT OF ORCHIDS.

BY EDWARD S. RAND, JR.

Within the last two years an entire change in the culture of orchids has been advocated, and in some instances carried into practice in England, and with no inconsiderable degree of success.

This new mode of culture, known as the "cool treatment," is directly opposed to the practice of the last thirty years, and to all the theories of orchid culture. The proposition on which it is based is that orchid houses have always been kept too hot, and the plants grown on a high pressure sys-

tem; that the maintenance of such a temperature is not only very expensive, as all experience has shown, but positively injurious to the plant, causing an exhaustion of the vital functions. The conclusion drawn is that any one having a heated grapery where the temperature is never allowed to fall below forty degrees Fahrenheit, may grow most of the orchids now in cultivation in great perfection, and withal ripen his grapes quite as well as when the house was exclusively devoted to them.

Now, if this can be done, and it has in some cases been successfully accomplished, the culture of orchids becomes easy, and much of the expense, which has deterred so many from attempting it is saved. The experience of florists and horticulturists hitherto has shown that it is impossible to grow grapes and flowers successfully in the same house; in other words, a grapery and green-house cannot be combined. But if our forcing houses can be adorned with the gorgeous, fragrant and curious flowers of orchids (than which there is nothing more beautiful and remarkable in the floral world), the discovery is one of the greatest value to the florist and amateur. We propose to condense from the latest English publications the experience of those who have put the new theory into practice, feeling that if further trial proves the discovery to be of general adaptation, its value can hardly be estimated. But first let us state that, while experience has shown that this mode of culture succeeds with most orchids, it does not suit the nature of those species which come from the hot damp jungles of the Eastern continent; but is more especially adapted to South American and Mexican species, particularly those which are natives of the great Andean range, where in fact the largest part of South American orchids occur.

We learn from Humboldt that although orchids are scattered throughout every part of the torrid zone, from the level of the sea to the height of ten or eleven thousand feet, yet it must be admitted that in the number of species, the coloring of their blossoms, delicious fragrance, rich foliage, and profusion of bloom, none can be compared to those that inhabit the Andes of Mexico, New Granada, Quito and Peru, where the shade is moist and the breezes mild, and the mean temperature of the year, at an elevation of between forty-eight thousand and sixty-six thousand feet, is from sixty-four to sixty-nine degrees Fahrenheit. In fact, these most beautiful of plants, like those most beautiful of birds, the hummingbirds, seem to cling with a marvellous partiality to the vast Andean chain which stretches from the frontiers of Mexico to the confines of Peru. These mountains are, geologically speaking, of recent date; the orchids therefore that inhabit them must likewise be comparatively recent: indeed, no fossil orchid has ever been discovered; although ferns, with which in these days orchids are invariably associated, have been found in countless myriads in the palœozoic strata.

About ten years since, continued failure in the cultivation of many New Grenadian and Peruvian orchids led to the suspicion that both the theory and practice of culture were fundamentally wrong; and experiments were tried in varying the temperature, which met with partial success. The fault still was that too much heat was given, and often too little moisture; consequently the finest species dwindled day by day, flowering poorly, if at all, and finally were lost to cultivation.

It was on the collection of Linden that the first decided move was made towards cool treatment, and the first decided triumph achieved; and there it was that the rare and beautiful Odontoglossums figured in "Pescatoria" flowered for the first time in cultivation.

In growing plants under the "cool treatment," the house should be low and small, and should be either a "lean to" facing the north, or a well-shaded "span roof." The temperature should be as equable as circumstances will permit, that is to say, during

the day time in winter it should not fall below sixty degrees, while during the day time in summer the less it rises above seventy degrees the better.

In the night, of course, the temperature will fall considerably, and even if it sink below fifty degrees no harm will be done; many of the finest Odontoglossums thriving at a minimum temperature of thirty-five degrees.

Experience has shown that the East Indian house, or a temperature averaging from a winter minimum of sixty degrees to a summer maximum of ninety-five degrees, is not the temperature suited to the well-being of a single known example of Odontoglossum or Lycaste. A Cattleya house, ranging from a minimum of fifty-five degrees to a maximum of eighty-five degrees, is not exactly suited to either of the genera named, though such species as *Odontoglossum grande*, *Bictonense* and *Nebulosum* will live and remain tolerably healthy under such a temperature, if accompanied with a proper degree of moisture. In fact, for such a collection and for such rare and valuable plants as *Epidendrum vitellinum*, *Lycastes* of all species, *Lelia cinnabarrina*, *anceps* and *flava*, *Cattleya Skinnerii* and *citrina*, *Trichopilias* and *Anguloas* of all sorts, and many plants of kindred nature, a minimum of forty-three degrees and a maximum of seventy to seventy-five degrees during the heat of summer are of all temperatures best suited to the plants. Lower than forty degrees (except in a collection composed entirely of *Odontoglossum Pescatorei*, *cordatum*, *membranaceum*, *Ehrenbergii*, and *Cervantesii*, which will bear thirty-five degrees), it had better never be, even in very cold weather; and some care must be taken to keep the plants during that time in a medium state of moisture.

Higher than fifty degrees at night during the dead of winter is not a good practice, although the temperature may be allowed to rise thus high during the day before giving air. Plenty of fresh air is of great importance during summer and autumn to consolidate the pseudo-bulbs and encourage free flowering.

It must be borne in mind and carried out in practice that in order to promote the health of the plants, the temperature in doors must rise and fall with the out-door air. A good proportion is from five to eight degrees during the night, and from eight to twelve degrees during the day.

The plants themselves may be grown either on blocks or in pots, the Odontoglossums always preferring the latter, and Epidendrums the former. The general directions for potting given in a former article apply perfectly to these plants. As a general rule, they all delight to grow in good rich fibry matter, such as is to be had in swamps and peat meadows, where vegetable fibre largely predominates. As many of the particles of earthy matter as can be easily got rid of should be separated from the turves by beating. If there is any inclination to soddenness or a disposition of any kind to obstruct through aeration, a good quantity of sphagnum moss should be introduced, which counteracts any bad effects.

There is nothing to be gained by impoverishing the semi-terrestrial species, and often cow or horse droppings well dried may be added to the potting material with beneficial results.

No Odontoglossum, Lycaste, Lelia, or Trichopilea, as a general rule, should be allowed to get dry at the roots.

Nothing cripples their power of action so much as drought, and it sometimes requires months or even years for a plant to recover from a single "drying off." It must be borne in mind that many of these plants have watery bulbs, and make several growths in a year (such are *Odontoglossum Pescatorei*, *crispum*, *odoratum* and *gloriosum*); and if the bulbs are once allowed to dry up and shrivel, they seldom recover their former vigor.

Occasionally it is necessary, in order to induce floral development, to check the luxuriance of particular species which show little disposition to flower annually unless thus wrought upon by the hands of the cultivator; but there is a particular time when such treatment is requisite (and each

plant must make its own rule), and its duration must not be extended for too long a period.

During the growing season no cessation of vigor must be encouraged; ample supplies of water, both at the root and in the atmosphere, are what the nature of the plant demands. If the potting material be of the right kind, so porous as to allow air to pass freely, and so fibrous as not to become sodden, water may be given once a day without injury.

To promote a moist atmosphere, the shelves of the orchid house may be strewn with wet moss, from which the evaporation is highly beneficial.

Insects should be kept under by the means given in former articles. We must, however, remember that the fumes of tobacco are injurious to many of the Odontoglots and other cool orchids, causing them to shed their leaves; and, as a general rule, a miscellaneous collection of orchids requires to be fumigated with great care and judgment.

We have said that experience has latterly tended to show that orchids associate admirably with vines, and that they may be successfully flowered and a crop of grapes be grown in the same house. If we consider the range of temperature we have given above for the regulation of a cool orchid house, we see it accords well with that required in a forcing grapery.

Experiments in England have shown that there are but few orchids which cannot be cultivated under vines, and that many of the East-Indian species, which have always been held in the greatest heat, will do well under this *régime*.

There are, however, some species, mostly found in the genera Vanda, Ærides and Phalænopsis, which cannot be thus grown, though these in summer will succeed in a grapery. This experiment is certainly worth trying in this country. Its success is, of course, questionable, for the intensity and force of our summer sun is so much greater than in England, that what may be a success in one country may prove a disastrous failure in the other; and the shade necessary for the plants might be too great for the grapes.

There is another advantage resulting from the discovery of the cool treatment system. It is not impracticable to grow orchids in cities where only a very small space can be given: the house must be small, and the temperature need not be high.

Both these conditions could be realized with but little trouble and expense. An attic room or a shady unsightly yard could, with a very slight outlay, be converted into a miniature orchid house, and the magnificent Andean orchids, together with the hardier ferns and lycopods, grown with very little trouble.

In London and other European cities, this has been successfully done, and there is no reason why success should not reward experiments of this kind in our own large cities.

Some orchids have been successfully grown in the house as parlor plants, and *Odontoglossum grande* has even been bloomed in England in the open air; but we are not enthusiastic in regard to "parlor gardening" with orchids, the result of all experiments showing that the only plant very successfully grown in the house was *Lycaste Skinnerii*, which roots more freely in peat than any other orchid.

It only remains to give a list of those orchids which experience has shown thrive remarkably in a cool house.

First, all the Odontoglossums from New Granada for the coolest house, those from Mexico and Guatemala thriving with a little more heat, but doing well in a house where the temperature is regulated as we have before prescribed.

The Indian Cœlogynes, particularly the deciduous tribe of Pleiones, which need plenty of water while growing, and which when well grown flower as freely as a pot of crocus.

Lycastes in all the species, but particularly *Skinnerii*, *cruenta* and *aromatica*.

Maxillaria *venusta*.

EPIDENDRUM *aurantiacum*, *vitellinum*, *macrochilum* and *cinnabarrinum*.

ANGULOA *Clowesii*, *Ruckerii* and *uniflora*.

BARKERIA *Skinnerii* and *spectabilis*.

DENDROBIUM *speciosum*.

PHAJUS *albus* and *grandifolius*.

CYPRIPEDIUM *caudatum*, and most other species.

UROPEDIUM *Lindeni*.

DISA *grandiflora*.

There are many other orchids which grow and flower better with a moderate degree of heat, and which do well in a cool house during the greater part of the year: such are *Lelias*, *Sophronitis* and many others.

This system of culture is as yet in its infancy, and we may reasonably hope that further experiments will prove that orchid culture, now confined to a few, may before many years be within reach of the masses, and the rich flowers of the Lelias, Odontoglossums and Cattleyas, the fragrant blossoms of the Ærides, Dendrobiums and Stanhopeas, and the curious blooms of the Catesetums and Coryanthes, be as well known at our horticultural exhibitions as the ever favorite roses, lilies and violets.

Glen Ridge, June, 1865.

CULTURE OF THE ROSE.—CONTINUED.

BY F. PARKMAN.

Climbing and Pillar Roses.

WHEN roses are trained to cover walls, trellises, arches or pillars, the main stems are encouraged to a strong growth. These form the permanent wood, while the side-shoots, more or less pruned back, furnish the flowers. For arbors, walls, or very tall pillars, the strongest growers are most suitable, such as the Prairie, Boursault and Ayrshire roses. Enrich the soil strongly, and dig deep and widely. Choose a healthy young rose, and in planting, cut off all the stems close to the earth. During the season it will make a number of strong young shoots. In the following spring cut out half of them, leaving the strongest, which are to be secured against the wall, or over the arbor, diverging like a fan, or otherwise, as fancy may suggest. The subsequent pruning is designed chiefly to regulate the growth of the rose, encouraging the progress of the long leading shoots until they have reached the required height, and removing side-shoots where they are too thick. Where a vacant space occurs a strong neighboring shoot may be pruned back in spring to a single eye. This will stimulate it to a vigorous growth, producing a stem which will serve to fill the gap. Of the young shoots, which, more or less, will rise every season from the root, the greater part should be cut away, reserving two or three to take the place of the old original stems, when these become weak by age. When these climbing roses are used for pillars, they may either be trained vertically, or wound in a spiral form around the supporting column.

Roses of more moderate growth are often trained to poles or small pillars, from six to twelve feet high. Some of the Hybrid China roses are, as before mentioned, well adapted to this use, and even some of the most vigorous Moss roses, such as *Princess Adelaide*, may be so trained. Where a pole is used two stems are sufficient. These should be examined and cut back to the first strong and plump bud, removing the weaker buds always found towards the extremity of a stem. Then let the stems so pruned lie flat on the earth till the buds break into leaf, after which they are to be tied to the pole. If they were tied up im-

mediately, the sap, obeying its natural tendency, would flow upward, expanding the highest bud, and leaving many of those below dormant, so that a portion of the stem would be bare. (The same course of proceeding may be followed with equal advantage in the case of wall and trellis roses). The highest bud now throws up a strong leading shoot, while the stem below becomes furnished with an abundance of small side-shoots. In the following spring the leading shoot is to be pruned back to the first strong bud, and the treatment of the previous year repeated. By pursuing this process, the pillar may, in the course of two or three years be enveloped from the ground to the summit with a mass of leaves and blossoms.

These, and all other rose pruning operations are, in the northern States, best effected in March, or the end of February, since roses pruned in Autumn are apt to be severely injured and sometimes killed by the severity of our winters.

SUBSEQUENT CULTURE.

Nothing is more beneficial to roses than a frequent digging and stirring of the soil around them. The surface should never be allowed to become hard, but should be kept light and porous by hoeing or forking several times in the course of the season. A yearly application of manure will be of great advantage. It may be applied in the Autumn or in the Spring, and forked in around the plants. Cultivators who wish to obtain the finest possible blooms, sometimes apply liquid manure early in the Summer, immediately after the flower-buds are formed. This penetrates at once to the roots and takes immediate effect on the growing bud.

AN EXPERIMENT IN ROSE GROWING.

The amateur may perhaps draw some useful hints from an experiment made by the writer in cultivating roses, with a view to obtaining the best possible individual flowers. A piece of land about sixty feet long by forty wide was "trenched" throughout, to the depth of two feet and a half, and enriched with three layers of manure. The first was placed at eighteen inches from the surface; the second at about nine inches, and the third was spread on the surface itself, and afterwards dug in. The virgin soil was a dense yellow loam of considerable depth; and by the operation of "trenching," it was thoroughly mixed and incorporated with the black surface soil. Being too stiff and heavy, a large quantity of sandy road scrapings was laid on with the surface-dressing of manure.—When the ground was prepared the roses were planted in rows. They consisted of Hardy June, Moss, Hybrid Perpetual, Bourbon, and a few of the more hardy Noisette roses. They were planted early in Spring, and cut back at the same time close to the ground. Many of the Perpetuals and Bourbons flowered the first season, and all grew with a remarkable vigor. In November, just before the ground froze, a spadesman, working backward, midway between the rows, dug a trench of the depth and width of his spade, throwing the earth in a ridge upon the roots of the roses as he proceeded. This answered a double purpose. The ridge of earth protected the roots and several inches of the stems, while the trench acted as a drain. In the Spring, the earth of the ridge was drawn back into the trench with a hoe, and the roses pruned with great severity, some of the weak-growing Perpetuals and Mosses being cut to within two inches of the earth, and all the weak and sickly stems removed altogether. The whole ground was then forked over. The bloom was abundant and the flowers of uncommon size and symmetry. Had the pruning been less severe the mass of bloom would have been greater, but the individual flowers by no means of so good quality.

STANDARD ROSES.

Of budded roses we shall speak hereafter, in treating of propagation. There is one kind, however, which it will be well to notice here. In England and on the Continent it is a common practice to bud roses

on tall stems or standards of the Dog Rose, or other strong stock, sometimes at a height of five feet or more from the ground. The head of bloom thus produced has a very striking effect, especially when the budded rose is of a variety with long slender shoots, adapted to form what is called a "weeper."

In France, standard roses are frequently planted near together in circular or oval beds, the tallest stems being in the centre, and the rest diminishing in regular gradation to the edge of the bed which is surrounded with dwarf roses. Thus a mound or hill of bloom is produced with a very striking and beautiful effect.

Unfortunately, the severe cold and sudden changes of the northern States, and especially of New England, are very unfavorable to standard roses. The hot sun scorches and dries the tall bare stem, and the sharp cold of winter frequently kills, and in almost every case greatly injures the budded rose at the top. It is only by using great and very troublesome precaution that standards can here be kept in a thriving condition. This may be done most effectually by cutting or loosening the roots on one side, laying the rose flat on the ground and covering it during winter under a ridge of earth. Some protection of the stem from the hot sun of July and August can hardly be dispensed with.

With regard to the mounds of standard roses first mentioned, it is scarcely worth while to attempt them here; but a very good substitute is within our reach. By choosing roses with a view to their different degrees of vigor, planting the tall and robust kinds in the middle, and those of more moderate growth in regular gradation around them, we may imitate the French mounds without the necessity of employing standards. Of course it will require time and also judicious pruning to perfect such a bed of roses; but when this is done it will be both a beautiful and permanent ornament of the lawn or garden.

ENEMIES OF THE ROSE.

A good soil, a good situation, free air and full sun, joined with good manuring, good pruning and good subsequent culture will prevent more diseases than the most skilful practioner would ever be able to cure.—There are certain diseases, however, to which roses under the best circumstances are more or less liable. Of these the most common, and perhaps the worst is the mildew. It consists in the formation on the leaves and stems of a sort of minute fungus, sometimes presenting the appearance of a white frost. Though often thought to be the result of dampness, it frequently appears in the driest weather. Many of the Bourbon roses, and those of the Hybrid Perpetuals, nearest akin to the Bourbons, are peculiarly liable to it. In the greenhouse the best remedy is sulphur, melted and evaporated at a heat not high enough to cause it to burn. In the open air the flour of sulphur may be sifted over the diseased plants.

The worst enemies of the rose belong to the insect world. Of these there are four, which in this part of the country cause far more mischief than all the rest combined. The first is the aphis or green fly; the second is the rose-slug or larva of the saw-fly; the third is the leaf-hopper, sometimes called the thrip, and fourth is the small beetle, popularly called the rose-bug. The first three are vulnerable, and can be got rid of by using the right means. The slug is a small green semi-transparent grub, which appears on the leaves of the rose about the middle of June, eats away their vital part, and leaves nothing but a brown skeleton, till at length the whole bush looks as if burned. The aphis clings to the ends of young shoots and sucks out their sap. It is prolific beyond belief, and a single one will soon increase to thousands. Both are quickly killed by a solution of whale-oil, soap, or a strong decoction of tobacco, which should be applied with a syringe in the morning or evening, as the application of any liquid to the leaves of a plant under the hot sun is always injurious. The same remedy will kill the leaf-hopper.

which being much more agile than the others, is best assailed on a cold day when its activity is to some degree chilled out of it. Both sides of the leaves should be syringed, and the plant thoroughly saturated with the soap or tobacco water. Two thorough and well-timed applications will suffice to destroy the years' crop of slugs.

The rose-bug is endowed with a constitution which defies tobacco and soap, and though innumerable remedies have been proposed, we know no better plan than to pick them off the bushes by hand, or, watching a time when they are chilled with cold to shake them off upon a cloth laid on the ground beneath. In either case sure work should be made of them by scalding or crushing them to death. Fortunately they are not very troublesome in most localities.

NOTES ON THE JUNE NUMBER.

CURIOSITIES OF HORTICULTURE.

A good record, but I fear giving too favorable a view of the profits of fruit growing.

We must recollect that all have not Philadelphia or New York markets, in which to sell; and again, we must recollect that prices of fruits for the past two years and now, have like many other things, felt the influence of an expansive currency.

Grapes, to command a dollar per pound, must be grown with no little expense of time, talent and outlay of structure.—Pears, to command a shilling a piece even in New York market, must have the inferior ones carefully thinned out from the tree, &c.; but we may safely conclude that whenever, and by whom, and in what manner fruit growing has been made profitable, the same may be continued, and with a reasonable probability of an increase. In many sections, our Delaware, Lydia, and Catawba grapes can be grown at a net profit of over two hundred dollars per acre, at six cents per pound, while peaches, apples and pears will pay a like sum when the trees are in full maturity.

FLOWERS IN MASSES.

A capital article, but the instruction for preparation of a flower bed, etc., is perhaps a little of the old grape school order, *i. e.* "an excavation of three to four feet deep." The writer has planted some twenty years, and finds on clay soil especially, that beds dug and prepared below the depth of the surrounding soil, do no better, if quite as well, as when kept a little above.

The taking up, digging, and replanting of all roses, etc., should be done every year, and the forking over of bulb ground, we prefer to do in the fall rather than the spring, then cover with a light mulch, and in spring rake off. Both ways are good.

GRAPE CUTTINGS FROM HISTORY.

I hope the writer will not be disappointed in his new and *superior* grape, but I beg of him not to puff it and have an auction sale until it has been fruited in more than one locality.

The introducer of a new fruit should strive at something more than the making the most money of it. It might have been added in "Curiosities of Horticulture," that no one who has ever introduced a fruit, showing as a leading object gain, has kept a reputation for character as a Horticulturist. It is the poorest of all professions to dissemble in.

By the by, let us ask Mr. Husmann to tell us a little about Rulander and some other of the grapes grown and little known. He knows all about them, and it will not do to let his modesty keep that knowledge entirely to himself.

GREEN-HOUSE FERNS.

Don't know much about them, but I do know some, and want to know more about our hardy ferns; for in fitting up rockwork, there is no plant that comes in more beautifully than they when a right exposure can be had.

HINTS AND QUERIES.

"Trouble, trouble, boil and bubble."—Well, my friend, "never say die." Try transplanting your English gooseberries every fall, digging the soil over, and we think you will get fair fruit. By so doing we have succeeded for years; yet one swallow does not make a summer, nor one man's practice make correct principles in Horticulture.

Others may think differently, but we should have no confidence in Kilmarnock willow enduring the winters where the common weeping failed, nor have we any confidence that Catalpa will endure any very extreme of temperature in winter, even if planted in sand.

FOREIGN TRAVEL.

He who loves to look on a beautiful beach, may see as elegant specimens as ever were grown, out of Cincinnati on one of the cross roads leading to Clifton; and for Spanish and French Marron Chestnuts, perhaps no better specimens are found than in New Jersey, at Burlington, &c.

As a general thing, we do not study the beautiful in tree. Most of us forget that we have two eyes and only one mouth, and so forgetting, too often plant a fruit tree where an Elm, Beech, etc., would, in a few years, contribute most to our actual enjoyment and comfort.

BUCKTHORN VS. HONEY LOCUST.

Let me add, that twenty-one years since, I planted a Honey Locust hedge, and it is yet in existence. It has been plashed and trimmed; is now about seven feet high; is a good barrier, but entirely devoid of beauty, as compared with one of Buckthorn planted some six years afterwards.

OUR METHOD.

So much is being now said of Grape culture, that it is perhaps better not to remark on "our method." I will only ask if *experience* has taught that *early in June* removing the secondary shoots from the double bud, and a judicious *pinching*, &c., is practically productive of the best effects.

FORESTS AND FOREST TREES.

Like all of the C. N. B. articles well considered, and as he says, one example in a neighborhood will, in a few years induce extensive copyings.

All cannot or will not read the article, but those who have should see to it, that its seed be sown on good ground, and when planting season again comes let its growth be apparent.

REUBEN.

UPON RAISING HYBRID AND SEEDLING GRAPES.

BY GEO. W. CAMPBELL, DELAWARE, OHIO.

THE remarks of Mr. Merrick, in the May number of the HORTICULTURIST, induce me to offer a few items of my experience, as I have been experimenting in the way of "raising seedlings" for some seven or eight years past. I have not raised a very large number, for I have never planted large quantities of seed promiscuously and indiscriminately. The seed that I have planted have either been selected from the finest specimens of the best varieties of grapes, or from those which have been hybridized or crossed with varieties having qualities which I desired to perpetuate. When I commenced these operations, the Delaware and Logan grapes were regarded as among the most valuable, and I planted seed from the Delaware, and made an artificial cross

between the two, using the Logan as the pistillate, and the Delaware as the staminate parent. I placed the seed in small vials, as they were saved, keeping each kind labeled and separate. On the approach of winter, I put the seed into clean, sifted sand in small pots, and buried it a few, inches under the ground, where it would be subjected to the action of frost. About the first of March, seed thus treated were taken up and planted in moderately rich compost in thumb pots; one seed in a pot, and placed upon a propagating bed. About two-thirds would vegetate within four weeks. Some earlier, but those that came up later were usually weak and imperfect, and apparently of no use. The plants from simple seedlings usually have a strong resemblance in foliage and habit of growth to the parent. Those from hybrids and crosses sometimes resemble one, and sometimes the other parent; and again exhibit very distinctly mixed characteristics of both. I will here remark that I use the term "cross" to indicate a seedling from the union of two native varieties, and "hybrid," when from a foreign and native. The main object which I have had in view in my experiments, was if possible to unite the qualities of the finest foreign varieties with the hardiness of our best natives. Secondarily, improvement of native varieties. To this end I made crosses between Delaware and Logan, Catawba and Logan, Delaware and Concord, Delaware and Union Village; also hybrids between Black Portugal and Delaware, Black Hamburgh and Delaware, Grizzly Frontignan and Delaware, Rogers' Hybrid, No. 4 and Delaware, White Frontignan and Taylor, Chasselas Fontainbleau and Taylor, Chasselas Musque and Concord, and many others. I have seedlings of all the above named growing; but a large portion of them have not yet borne fruit; and of those that have, I am sorry to say the number promising any valuable results is very small. We have grapes enough of merely tolerable quality already; and I perceive no benefit to the public in multiplying this class. But if a Delaware of increased size of bunch and berry, with also somewhat stronger growth could be produced, all would recognize its value at once. Or if a Catawba could be produced, ripening early in September, its worth could hardly be estimated. As much might be said of a hybrid, with the quality and flavor of the Frontignans, or Hamburghs, if united with the hardiness and earliness of the Concord. I am laboring in the *hope* of producing some such result, but I cannot express much confidence of ever reaching it. Certain I am, that I have not done so yet. Of the Delaware seedlings, none are equal to their parent in their present stage of development, though one or two white ones may be worth perpetuating on account of their color.

Of the crosses of Delaware and Logan, but one so far seems worthy of any attention. This one has many good qualities, being perfectly hardy, with thick, strong healthy foliage, very productive, having usually four bunches on each fruit stalk; bunches rather large, compact; berries black, oval, and intermediate in size between Delaware and Logan, ripening about the first of September. The quality, apparently a perfect mixture of the two varieties—an improvement upon the Logan, but inferior to Delaware.

Of the Catawba and Logan cross some two or three may be regarded about as promising as the one above mentioned, ripening also early in September. They have borne fruit two years, and if they observe the usual law of improvement as they become more fully developed by age, may be of some value. While I believe it is *usual* for grape seedlings to improve for a series of years after they come into bearing, I have reason to doubt its being universal; for some Delaware seedlings, and I think some others have developed *the wrong way*, having been better in their first bearing than ever since.

As to the hybrids with foreign varieties, though but few have borne, I have nothing

very encouraging to report. Several of them have borne fruit—but none have yet met my expectations or wishes.

Of hybrids, as well as seedlings, a large number prove weak, unhealthy, tender, and subject to mildew. All such are unworthy of any attention, for in seedlings such defects appear radical, and no treatment that I have been able to give has ever removed them.

In planting seed, I have never used any more than two years old, but have found these to give nearly as well as the first year. They were kept, however, during the first year in corked vials, and not subjected to freezing till the second year.

In addition to those above named, I have re-hybridized several of Mr. Rogers' Hybrids with Black Hamburgh, and other foreign grapes,—but I believe none of the seedlings from these have been able to endure the Winters, and have died out the first winter they were left exposed.

I might mention many other particulars as to the effect of hybridizing upon the foliage and habits of growth of our native varieties, but will not at this time further tax your patience, or that of your readers. I may, perhaps resume the subject hereafter, as further facts present themselves.

Delaware, Ohio, May 10, 1865.

A CHAPTER ON THE WREN.

BY G. P. DISOSWAY.

> "They have no team, and have no plough;
> They neither reap, nor sow, nor till,
> Yet God in heaven feeds them still."
>
> HEBEL.

I LOVE the Wrens. Birds, from the earliest times, have excited the attention and the admiration of man,—a thousand familiar songs and rhymes greet them along their paths, as they pass by us on their airy journeys. Spring, now so transcendently beautiful, would be mournful without birds, like winter, is more desolate and gloomy by their departure.

The Wren is an active, lively, familiar little bird, and shares with the Robin, especially the affections of the country people. Its flight is direct, from bush to bush, and feeding principally upon insects, and occasionally seeds and fruits. In the spring and summer time, the male sings a very sweet song, exceedingly loud and rich, especially when we consider the smallness of the pipe producing the cheerful notes.

The flight of a bird truly seems supernatural, and this wonderful power by which the birds are lifted beyond the sphere of every day life attracts us most. But song is the bird's mystery; and we can hardly fancy to ourselves the free rovers of the air not endured with some force. The dumb bird, is to me, as it were, a lonesome sight. What a world of tones between the hoarse cawings of the black Raven, and the enchanting song of the Nightingale,—the shrill cry of the Osprey, as he swoops upon his doomed prey, and the cooings of the Turtle Dove! How manifold, too, are the accents of a single bird's voice! Now altered quickly, now soft and long drawn out; then fine and sharp, with sudden stops. Thus it has the power alike to express the feelings of content, love, or of sorrow and jealously; in short, of every joy and every grief.

Who does not remember the delight, which the earliest greetings of the Lark awaken within our bosoms, with the coming spring? That refreshing feeling pervading the heart, when, after cheerless wintery days and nights, the first sunbeams arouse this active race to new songs.

It is clear, the birds give a melodious voice to the fair face of nature, and along

with it, that indescribable charm, which nature's beautiful works can exercise over the minds of men.

The Wrens are very familiar, seeking to be near the habitations of men, although they do not exhibit the same confidence as the Robin, generally concealing themselves very quickly when too closely approached. Wrens pair about the middle of the spring, and early in April, begin to construct their nests. These they place principally in holes and crevices of walls, banks or trees; on thatched roofs, and among climbing plants. They are lined with feathers, and contain from 7 to 12 eggs, and have two broods a season. It is calculated that these little beings bring food to their young, not less than two hundred and seventy-eight times in a day, with some insect every visit!

Our American *House Wren* is migratory, coming from the south early in May, and builds its nest at times in the wooden cornices, under the eaves, and always in the little houses prepared for them. We are very careful to provide these welcome annual visitors, every variety of accommodation in the way of *wreneries*. We sometimes imagine, they are so well pleased with them, as to return to the same rural dwelling, among our honey suckles or running roses they occupied the previous season. We repair these bird cottages regularly every spring, carefully as we do our own rural abode. But take a peep inside of them; who can help admiring the internal domestic arrangements, composed of so many different materials, and arranged with such marked skill and labor.

The greatest wonder is, that the whole is done without any other tools except a little beak and two very small feet.

Man can erect magnificent edifices according to the rules of art, and it is no wonder, for reason guides his hands. But who has taught the Wren that she is to lay eggs, and must have a nest for this purpose? Who, that it must not be too large or too small for her rising family? Who teaches her the exact time, so that she never lays her eggs before her nest *is finished*? All that has been said in answer to such questions, is unsatisfactory to us, and does not account for these mysteries, wonderful as INSTINCT is. Let us not be contented with a solution from this mysterious source.—Instinct should be only the first step to more exalted and sublime meditations. We cannot properly say that *nature* teaches the birds this art, for if you separate nature from its GREAT AUTHOR, it becomes a word without meaning. Rather should we glorify GOD, the wise CREATOR, and acknowledge that HE alone gives wisdom, skill and industry, even to the fowls of the air.

We all remember our nursery rhyme:

> "How doth the little busy bee,
> Improve each shining hour,"

And we can, with great propriety, adopt the sentiment to the WREN.

> How doth the little busy Wren,
> Improve each shining hour!

For a more industrious small bird we do not know. It is constantly on the wing, or busily engaged in finding insect food, as it hops from twig to twig. The Wren will richly repay you rents for his houses, in the destruction of myriads of larvæ and insects, colonies on your vines and fruit trees, unseen by you, but plain to his bright, piercing eyesight. We often watch his rapid motions with his useful bill, while engaged in this good work, and at the same moment, beguiles the hour with a cheerful song. He is a great songster, in his line, pouring forth his cheerful notes early and late, raining or shining. While I write, an easterly storm is raging, but my welcome, cheerful kitty Wren, every now and then pours forth his joyful spring notes, near where he and his lady love are evidently preparing for house keeping.

We love the WREN, and advise all to give him a pleasant home.

THE CLOVE, S. I., May, 1865.

EVERGREENS.

BY I. H., LONG ISLAND.

How often are we reminded of the uncertainty of terrestrial things. About the first of Spring we took a walk among some new varieties of evergreens, and were delighted with the fresh green of their appearance. They looked very promising, in fact all we could wish.

The next day was unusually warm, the thermometer ranged about 80° in the afternoon. In a day or two we again looked at our evergreens,—what a change! The pretty green was turned to a dingy brown, and all the outside of the trees were scorched.

We have had much cold weather this winter, and but little snow here, so it was not the snow or the cold, for they had passed through a temperature of 10° below zero unhurt. What then was the cause of the browning of trees that came from the western coast of America—the Thujopsis borealis, Lawson's Cypress, &c.? Last year the Cryptomeria Japonica were all killed after a hot day in March, so were a few others injured. We think that the roots had not begun to draw up the moisture from the soil to compensate for the evaporation caused by an unusual warm day, and they were scorched as if placed in an oven.

We know they withstand the hottest days of summer without injury, for the resinous sap diluted by the moisture drawn by the roots from the soil, supplies all the demands of evaporation upon it. But when exposed to such sudden elevations of temperature in the latter part of winter or early in spring, before the sap is in active circulation it must burn. Box and other evergreens on the north side of the house, or other cool sheltered places was unhurt. We think the cold or the freezing of last winter, or any winter had nothing to do with it. Excessive cold kills the fruit buds and tender deciduous trees and plants, but we think not the evergreens. It is the heat and not the cold, and then only by great and sudden changes.

When the trees are small a slight protection from the sun's rays will suffice, but we believe our old well tried friends, the Pines, Hemlocks, Norway and White Spruce, American and Siberian Arborvitæ, among larger trees, and the Swedish Juniper, Erect Yew, and a few others, perhaps will give the best satisfaction. If we plant good specimens of the older kinds, take good care of them and give them the needful training they are beautiful enough for any one. Too few attend to the training of their evergreens after they are planted. In selecting evergreens, the oftener they have been transplanted the better roots they will have, and the more compact will be their growth—a very essential condition. We do not care so much about the top of a tree, for if wrong it can be righted by cutting back and training; but if deficient or wanting in the lower branches, and the upper branches extend beyond, nothing but severe trimming and some years retarding will bring it to a proper shape.

If a pine grows long and spindling cut off the leader on the top, and the leaders on the first and second tier of side branches. Select one of the branches that can be best spared and tie to the stump of the upright shoot. Nipping out the central bud when two or three inches long will answer to make the tree bushy. Spruce and Firs will form leaders for themselves, and if the leader shoots up too long, or the upper side branches extend out too far, so as to overtop the lowest ones which they should never do, cut the limbs back the same as we would for a fruit tree or flowering shrub, Spruces, Hemlocks and Arbor Vitæs can be trained singly by the use of the shears, as we want them, or in the form of hedges as easily as deciduous trees or bushes.

LETTER TO MY COUSIN SELINA.

Dear Cousin Selina:

I remember my promise, when I left our home away up country, to write you from the city during my visit, and give you sketches of some things which should seem most note-worthy, and most likely to interest you. I have visited the great libraries of the great metropolis—the Astor, the Society, the Historical, and the Mercantile—and bewildered myself among the multitude of books, very many of which are strange to me, even in name. I have lounged in and out at Schaus', Goupil's, and the Old Düsseldorf, and enjoyed, with a new and intense delight, their exhibitions of art. I have, for several days, been one in the crowd at the Fortieth Annual Exhibition of the National Academy of Design, in their new and unique building, now first occupied. I have foregathered there, not in person, but as they have expressed themselves on canvass and in color, with Bierstadt and Church and Durand and Huntington and Kensett and Weir, and with a score of other and younger artists, until I seemed almost willing to forget the fair face and aspects of nature in my admiration of art, and for the moment felt that my heart would never again leap up when I got back into the still and solitary country, and beheld the rainbow in the sky. In all this, as you may readily understand, I have literally reveled. The only material drawback to me, who have lived all my life, as far as bodily conditions are concerned, in the secluded country, and visited galleries and libraries only in fancy or in dreams, has been that my mind has been overcrowded with objects for thought and admiration; my inspirations have been perplexed and my sensations confounded by the *embarras des richesses.*

But I do not intend to undertake now any description of these objects of interest which I have named. I have made, indeed, some memoranda, and arranged as well as I can the order of things in my memory, not forgetting, as you gave me charge, my regular records in my diary, so that, when I return to the country, I shall be able, perhaps, to afford you some entertainment and pleasure with my recollections of what I have seen and enjoyed.

However, yesterday I thought again of the "rainbow," and of the green and beautiful country, the fresh air, the bright sunshine, and the song of birds, and I resolved to spend the day in the Central Park. It was not my first visit to those delectable grounds, and I am the better able, therefore, to undertake to sketch for you some of their principal charms; and, as the weather to-day is too unpropitious for outdoor explorations, I shall endeavor to give you some account of what is to be seen there. I send you, however, no minute description or statistics, because I am sure you have not forgotten the pleasant papers on the Park which we read together in the last year's numbers of the Horticulturist.

You are aware, doubtless, that the Park contains about eight hundred and fifty acres, one fifth of which is water surface, lakes and ponds and pools. The total cost of the land and construction, to this date, is about nine millions of dollars.

These magnificent grounds are open to the public, and the people are allowed free access at all times. They are visited daily not only by the wealthy classes who can drive or ride, but by many thousands of those whose lot is cast amid the toil and turmoil of the great city, who have thus the privilege of refreshing their eyes and senses with the floral and other treasures on which so much cost and care have been expended. These grounds, you understand, are quite extensive; and nature has given them such diversity, and art has varied them with such beautiful slopes and soft lawns, and planted them with such varieties of trees and shrubs and flowers, as to render

them wonderfully attractive to every lover of the beautiful. I cannot tell you now whose was the brain to plan, whose was the experience to carry out the plans, whose was the fostering care that crowned those plans with such complete success. Several superintendents and architects and eminent landscape gardeners have been employed; but there is an evident unity of design and plan which indicate that the cultivated taste and artistic eye for pleasing combinations of forms and judicious distribution of colors, and a true judgment in grouping and symmetry, have not been wanting. Woods, lakes, pools, fountains, clumps of trees, single trees, masses of shrubs, all have been duly arranged, and as it were made to fall into their respective positions in the landscape; and no slight experience or imperfect knowledge of the harmonies of forms and colors could lay out a thousand acres of undulating park, so that the wood and water should be made to assume their most picturesque forms, and a million bright blossoms of every hue be gathered into their proper places. All this seems to have been provided for and duly regarded, so as to take full advantage of the capabilities of the ground; and the result is a triumph of landscape gardening, creditable alike to the fine taste and the practical skill of those who have had the superintendence of the Park. And thanks to the large munificence of the city of New York, these beauties are freely accessible to the tens of thousands of the industrious classes, whose long days of toil amid brick and smoke and steam make a visit to the fresh loveliness of the country a healthful medicine to mind and body.

As we stroll through these grounds, and gaze upon the many flower-beds, each for the most part filled with but one particular kind of flowering plant or shrub, but all one blaze of beauty; as we admire the borders, composed of lines of flowers, crimson, orange, blue, white, purple and scarlet, all in their proper season and place; as we feast our eyes upon these glowing colors and rich masses of green shrubs, and spaces of smooth turf, we cannot doubt for a moment that the expenditure of these millions has been both wise and beneficent.

I cannot go into much detail as respects the variety and richness of this collection of trees and shrubs and plants; but I must mention that there are valuable specimens of the Pine tribe, some of which have been procured with considerable cost. Among the thirty specimens of the Pine, we find here the *Pinus macrocarpa*, and several others whose *habitat* is in the Rocky Mountains, the P. Montezumæ, Ayacahuite, Banksiana, Excelsa, Insignis, &c. But I am going more into detail than I purposed. I must leave description, and anticipate improvements of which there are no special indications as yet, but which undoubtedly are embraced in the plans of the commissioners.

Cowper says, "Who loves a garden loves a green-house too"; and it is to the green-houses and conservatories which are yet to be added to the Park that a large degree of interest will be due. Certainly to one who, on a lovely summer's day, looks upon the Central Park as it is, upon the flower-knots, each filled with its own peculiar color, and scattered like rainbow drops over the wide expanse of velvet lawn; to one who observantly rambles through such grounds, drinking in deep draughts of delight at every step, as the varied beauties of the spot pass before him—its pools, and lakes, and fountains, and cascades, its ravines, and caves, and rocks, its architectural structures and statuary, its clumps of fine growing trees, its plantations of rare and beautiful evergreens, its thickets of rhododendrons and azaleas, its undulating borders of herbaceous plants, and all its thousand triumphs of nature and art, combined and harmonized —there might seem to be small need of any thing more. It may well be pronounced perfect in its present state. Any seeming deficiency will be amply remedied by the natural growth; and when these transplanted trees shall crown themselves with a half or a quarter century's increase, the

Park will be the realization of a terrestrial Paradise.

But, O Messrs. Commissioners of the Central Park—I should say, if I were writing to them, instead of my sweet cousin Selina—O give us, the public, green-houses and conservatories too! Cousin, let us step into this great Conservatory, crammed with bloom, with climbing plants wreathed around its pillars and girders, and swinging their festoons on high; the orange-house, with its living bridal bouquets and golden globes; the green-houses with their roses, and heaths, and begonias, and gloxinias, and camellias, and a thousand and one floral attractions; the vineries, and pineries, and peacheries, and orchard houses, rich with luscious fruit; and the stoves, hot and damp, and overpoweringly fragrant with the odor of Cape Jasmine and delicate exotics, with fairy-like ferns, and rare lycopodiums, with water-lilies and other aquaria floating in their hot tanks, with dwarf trees, and tussock grasses, and prickly cactuses, and strange orchids, with their curious blossoms like winged birds, butterflies, and insects. Ah, what a world of marvel and beauty is here!

But the rain is over, and the sun is shining out brightly and warmly in the western heavens. An engagement to dine and sleep with my Westchester cousins compels me to close my letter to my cousin in the far-away homestead. With love to uncle and aunt and cousin Washington, I am, as aforetime,

Your affectionate cousin,

REUBEN.

NEW YORK, June 9, 1865.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

CLEVELAND, Ohio, 6th June, 1865.

It's dangerous writing you, Messrs. Woodward, for you have a queer way of printing one's scribblings; and the first one knows of his hasty remarks is that it has been printed, and then somebody has been drawn out into the writing of a long acticle, &c. Well, never mind. If they all tell as much of plain truth as our friend Husmann did about grape growing, or rather about preparation of ground, why, let them write.

I have mislaid my copy of the HORTICULTURIST for May, or I would touch upon an item or two in that article; but I here give Husmann, and all other good grape men, notice that I am going to speak out some day; and as I see somebody out West wants to know what I think about locations and soils for grapes, you may tell him I'll write. But I now say that, while the grape can be made to grow and fruit almost anywhere and in almost any soil, it is not every soil and location that will prove profitable as vineyard. I will say one other thing also now, viz., that expensive trellises of posts and slats, with wires running up and down across the slats, and training grapes thereon, may do for fancy garden culture, but will not answer for vineyard, both by reason of expense and the actual labor of tying and pruning. By-the-by, every man, it is said, is good for something; so, in our grape meetings, it is said I am good to draw other people out, by question or assertion, and now I want to know who, among your readers, has ever tried tying the ends of long canes of the grape together, giving each vine two canes of six feet each, placing

one stake at the vine for new wood to be tied to, and one stake half way between each vine to support the tie of the two connecting canes that are to fruit.

And again, who has succeeded in bringing an apparent barren vine into fruiting by cutting in of its roots and pruning it back just after the first leaves have formed?

Early Purple Guigne Cherry and some others are now ripe and fine; but most of the varieties, as Elton, Downton, Bigarreau, &c., were materially injured by a late frost.

For three grood cherries take Early Purple Guigne, Rockport and Red Jacket; and for prairie or other very rich soils, let them be worked on *Morello* stocks.

Strawberries are showing fine; but if the weather keeps hot and dry as for the past week, they will not last long.

By the way, how is it that all my Russell's Prolific and Buffalo, show strictly pistillate flowers? I am sure I read that they were termed perfect.

Again, will some one tell how to pick out the plants or fruit of the two *named* sorts above, one from the other? I suppose there is a difference, because honorable men have said so, but I can't see it.

Pears are showing fine, and if nothing happens I hope to send you fruit of a new very early sort, a seedling never yet let out. I would say it is "excellent," but that word is attached to nearly every pear in nursery catalogues. However, will taste them, and then coin a word perhaps.

Apples only small crop.

Yours, F. R. Elliott.

Messrs. Editors:

I have been sadly disappointed with my bed of Russell's strawberry this season. Having been repeatedly assured that they were self fertilizing, I planted them in my garden at a distance from other varieties, wishing to keep them unmixed. They flowered abundantly, but did not set the fruit. The flower I examined carefully, but I could not detect, even with a magnifier, the *capsula staminis*, which they are said to possess. The anther is so exceedingly minute that it requires some faith to discover it; and I pronounce it "very uncertain." Were the plants genuine? Yes, for, after the bed above described was planted, I had fifteen or twenty plants left, which I set on a border separated by a garden path from Wilson's, Albany; and these few plants are Russell's Prolific, beating in quantity either Wilson's or the far famed Agriculturist. My advice is to place a staminate among the Russell, to entitle it to its adjective *prolific*.

M. V. M.

Hardpan, June 15th, 1865.

Prince's Nursery For Sale.—We call the attention of our readers to the advertisement of Messrs. Prince & Co., of Flushing, who offer for sale their old and well known Nursery. Flushing is one of the immediate suburbs of New York, easily reached at all hours, by boat and train, and is an attractive and convenient locality to live in.

Comparatively speaking, the vicinity of New York has never had anything like an adequate advantage in local Nurseries; they are few and far between, and owing to small competition, their proprietors have become men of solid and substantial wealth. So fine a field, and so vast a demand makes the environs of a great business centre like New York, superior to most other localities for the nursery trade. An established and well known nursery is seldom in the market, and those who are looking for a good opening in this line of business, should investigate the offer of Messrs. Prince & Co.

The Mulberry.—When every other tree in garden, wood or wold has donned the green vesture of spring, one still remains in "naked majesty," as Adam of the Eden. The cold night winds nipping so many tender buds which had been too early lured forth by transitory noontide sunshine, beat harmlessly upon the mulberry's sapless bark; and not till the last spring frost is

over, and cold has finally yielded to the mild persuasions of approaching summer, does it abandon its bare-branched security, and suffer its young leaves to venture forth, gladdening the watchful gardener with an unerring token that his hitherto sheltered nurslings may now be safely trusted in the open parterre.

But though the foliage displays such singular reticence as regards making its first appearance, it might offer the same kind of apology which was tendered by Charles Lamb, when on being remonstrated with for coming to business so late in the morning, he replied, "but then remember how early I go away in the afternoon." For though mulberry leaves are the last to put forth in spring, they are the very first to leave in autumn, the least frost bringing them all to the ground.

Grasses.—In the early summer our fields and meadows are feathered by numerous flowering grasses, which form objects of great interest to the botanist and the artist. Yet comparatively few avail themselves of the great pleasure which these elegant plants offer. Flowers are eagerly culled for the tasteful bouquet, but seldom does a group of flowers present so light and graceful a contour as a group of grasses. Ferns and seaweeds are patiently studied, and grasses are neglected, though these latter are much more easy of classification, more beautiful as dried specimens, and as valuable in cultivation, and in our drawing room vases. These graceful plants, however, are gradually receiving more attention from the fancy gardener, especially among the English cultivators. Bunches of Pampas grass wave their pennons on the English lawns, and lift high their panicles of glossy florets; and the Hare's tail, Panick and Quaking grasses alternate with flowers in the gay borders. In Germany and Switzerland, we find grass bouquets in every drawing room, and dried ones for the winter, retaining their own soft and delicate coloring.

A grass is the simplest form of a perfect plant. From a fibrous root a slender stem shoots up, clothed with alternate leaves, which are long and narrow, and have the veins running side by side from one end to the other. In the true grasses the stems are round and hollow, and the sheathes of the leaves open at one side; but in their cousins, the sedges, the stems are solid and angular, and the leaf-sheathes form perfect cylinders. The highest leaf on the stem of the grass, acts as a cradle for the buds until they are sufficiently formed to emerge to the open day.

The Garden.—"My God, my garden, and my grave, is now all I have to live for," was once said by a pious churchman who had spent a toilsome life, and was ready to depart with Simeon's prayer upon his lips. In the quiet of his garden there was much to attune his heart to the great change through which he must soon pass, through the grave to the ineffable presence. In his garden, he would be surrounded by "floral apostles,"—as Horace Smith called them—that would silently preach to him many lessons of truest wisdom; for, in the words of Allan Cunningham:

> "There is a lesson in each flower,
> A story in each stream and bower;
> In every herb on which you tread,
> Are written words, which, rightly read,
> Will lead you from earth's fragrant sod,
> To hope, and holiness, and God."

Indeed, the occupation that is to be found in the garden, brings not only health to the body but to the mind also. This is admirably illustrated in an instance to which we wish to call the attention of such readers of the Horticulturist as have occasion to witness the numerous examples of juvenile depravity in our great cities, and are interested in their reformation.

In the eastern suburbs of London, a professional horticulturist has long since adapted the benevolent and praiseworthy scheme of giving employment in his gardens to those young thieves who wish to leave off their sinful course of life and take to

honest labor,—labor which no one seems disposed to give them, and the lack of which, therefore, throws them back into their old evil ways. This humane person comes to the rescue of these outcasts, and sets them to work in his gardens, where there is no sedentary occupation in a close and stifling atmosphere to repel them at the outset of their undertaking; but where there is plenty of fresh air, labor enough to procure appetite for their meals, sufficient society to be pleasant without being pernicious, (for there are wise rules on this point, to prevent the boys from herding and plotting together and keeping up the contaminations from which they have been rescued,) and sufficient freedom to make them feel otherwise than prisoners. After a time of probation satisfactorily passed, they are entrusted upon errands, and sent to pay and receive bills; and there is scarcely an instance in which the trust reposed in them has been found to be misplaced, but in the majority of cases, the judicious treatment, and the gentle delights of the garden have completely humanized the little outcasts, and have fully reclaimed them from those "gardens of guilt" in which their early years were passed. Such a work as this is truly philanthropic and christian.

The Fruit and Crops in the Interior.—Inquiry among the fruit-growers and farmers affords very pleasing information as to the prospects of the season in their important departments of industry and production. Fruit of all kinds most cultivated hereabout promises well. The trees have withstood the Winter and have budded in a promising manner. May has opened mildly, and there is reason to hope that no frost will blight the tender fruit. Bountiful crops of peaches, apples, pears, cherries, plums, grapes and strawberries will yield those who cultivate in Western New York, hundreds of thousands of dollars, and afford pleasure to all who consume these luxuries that Providence permits us to enjoy in this favored climate. The reports from the fields are no less favorable than from the orchards. The farmers began their Spring work pretty early, and accomplished more in the way of planting and sowing in April this year than in any that has preceded for a long time The weather has been opportune. Owing to the scarcity of help more time was requisite. But little ground will go uncultivated for want of labor, as the hoeing, haying and harvesting times come along there will be plenty of laborers from the returning army at the South. The fall-sown crops—wheat, rye and barley—promise well. The Winter and the Spring were as favorable as the farmer could desire. We may congratulate the farmers and all others of Western New York—for all are interested in the success of the crops—on the prospect the season affords.—*Rochester Union.*

Vegetables for the London Market.—In the gardens about London, according to the statement of Mr. Loudon, the following are the chief varieties of vegetables cultivated for market:

Of the *Cabbage* tribe, seven varieties,—the white, the red, the savoy, the brussels, the borecole, the cauliflower, and the brocoli.

Of the *leguminose* plants,—the pea, the kidney bean, and the garden bean, with their endless sub-varieties.

Of *esculent* roots,—the potato, the Jerusalem artichoke, turnip, carrot, parsnip, red beet, skirret, scorzonera, salsify, and the radish.

Of the *Spinaceous* plants,—the spinach, orache, white and sea beet, the wild spinach, New Zealand spinach, the sorrel and herb patience.

Of the *alliaceous* roots,—the onion, leek, cive, garlic, shallot, and rocambole.

Of the *asparaginous* tribe,—the asparagus, sea kale, artichoke, cardoon, rampion, and alisander.

Of the *acetarious* tribes,—the lettuce, endive, succory, celery, mustard, wood sorrel, corn salad, garden cress, American cress, water cress, and the small salads.

Amongst the *potherbs* and *garnishings*, are the parsley, purslane, tarragon, fennel, dill, chervil, horseradish, nasturtium, marygold, borage, &c.

Amongst the *sweet herbs*, are the thyme, sage, clary, mint, marjoram, savory, basil, rosemary, lavender, tansy, and cotsmary or alecost.

For the uses of confectionery or medicine, the following plants are cultivated:—the rhubarb, gourd, angelica, anise, coriander, caraway, rue, hyssop, chamomile, elecampane, liquorice, wormwood, and balm.—The tomato, the egg plant, capricum, and samphire are also sometimes grown.

"The Garden is a bound volume of agricultural life, written in poetry. In it the farmer and his family set the great industries of the plough, spade and hoe in rhyme. Every flower or fruit-bearing tree is a green syllable after the graceful type and curse of Eden. Every bed of flowers is an acrostic to nature, written in the illustrated capitals of her own alphabet. Every bed of beets, celery or savory roots or bulbs, is a page of blank verse, full of *belles lettres* of agriculture. The farmer may be seen in his garden. It contains the synopsis of his character in letters that may be read across the road. The barometer hung by his door will indicate certain facts about the weather, but the garden, lying on the sunny side of the house, marks with great precision, the degree of mind and heart culture which he has reached. It will embody and reflect his tastes, the bent and bias of his perceptions of grace and beauty. In it he holds up the mirror of his inner life to all who pass; and with an observant eye they may see all the features of his intellectual being in it. In that choice rood of earth he records his progress in mental cultivation and professional experience. In it he marks by some intelligent sign, his scientific and successful ceremonies in the cornfield. In it you may see the germs of his reading, and you can almost tell the number and nature of his books. In it he will reproduce the seed-thought he has culled from the printed pages of his library. In it he will post an answer to the question whether he has any reading at all. Many a nominal farmer's house has been passed by the book agent without a call, because he saw a blunt, gruff negative to the question in the garden or yard.—*Elihu Burritt.*

Flowers and Perfume.—Unlike many usages of remote antiquity which are still preserved, the employment of perfumes is in no wise indicative of barbarism. The most refined nature delights in the sense of smell, and the more delicate the human organism the more exquisite is the enjoyment. For the most part, choice perfumes are derived from flowers, or vegetable productions, though several varieties highly esteemed are the product of the animal and mineral kingdoms, and through the aid of chemical science, perfumes are extracted from substances associated only with the most repulsive odors. For example, butyric acid, the product of rancid butter or putrid cheese, imparts the flavor of a luscious pineapple; the fetid fusil oil, obtained in rectifying liquors, becomes an essence of pears; the noisome oils of gas tar are made to yield the flavor of bitter almonds, being often preferred to the genuine article for confectionary and culinary purposes. But as a general rule those odors which are intended to gratify the sense of smell, are instinctively suggestive of whatever is beautiful in the world of flowers, and are regarded as an etherial form of floral creation. Their fragrance brings to mind

> "Gorgeous flowrets in the sunlight shining,
> "Blossoms flaunting in the eye of day."

France, Switzerland and Italy are the most prolific of flowers, as a source for the supply of those who distill essences. In some places the culture of flowers for this purpose is on an enormous scale. The flower harvest gathered and sent to the towns of Cannes, Grasse, and Nice, in France, exceeds 2,500,000 lbs. per annum. In Cannes alone the quantity manufactured is as follows: Orange blossoms, 1,475,000 lbs.; roses, 530,000 lbs.; jasmine, 100,000

lbs.; violet, 75,000 lbs.; acacia, 45,000 lbs.; geranium, 30,000 lbs.; tuberose, 24,000 lbs.; jonquil, 5,000. In Grasse the product, no doubt, is still larger, as this town recently had no less than seventy establishments engaged in the manufacture of perfumes, and the other two about thirty. The process of distillation is very simple, the odor of boiling flowers being condensed with the steam, in the form of "ottos." Besides this, a favorite method is the process of *enfleurage*, or maceration, in which grease is repeatedly charged with flowers, till the precious odor is absorbed to the requisite degree. The flower farmers of the Var cultivate many acres, from which the crop is gathered by women and children, then weighed in the laboratory, where clarified suet, lard, &c., is accumulated through the winter season, and afterwards spread on glass frames like a window sash, to receive the repeated layers of blossoms as matured from day to day. The grease being inflowered in this way, is at last scraped off, strained, and packed in canisters for the market. Dr. S. Piesse, whose work on perfumery enjoys a wide repute, lectured upon this subject a few weeks ago, before the Royal Horticultural Society of London, giving a great variety of interesting facts, such as the effect of blending different blossoms, the method of cultivating roses, cassie, jasmine, &c. An acre set with 7,000 rose plants is expected to yield 5,000 pounds of petals worth say £30. Cassie, after the third year, yields from £30 to £40 per acre. In cultivating jasmine, 8,000 plants are set to the acre, and 60 lbs. weight is yielded by every 1,000 plants after the second year. The tuberose is the most difficult flower to grow, but is the most profitable, a good plantation lasting seven or eight years. The orange in full vigor yields an average of 25 lbs. weight of blossoms annually. The violet is so susceptible to the sun's rays, that on the farms at Nice this delicate plant is grown under the shade of orange and lemon trees, or where protected by walls. A surface of land equal to one acre, yields 180 to 200 lbs. of flowers, valued at two francs the pound. Dr. Piesse stated that in France this traffic has risen to the annual value of £3,000,000. England has always been famous for the production of lavender. The two Sicilies export the oil of lemon and bergamot in large quantities. The United States contributes essences and essential oils, such as peppermint, wintergreen and sassafras, but this branch of industry with us has as yet scarcely attained an embryo existence. The climate is not remarkably propitious for flower culture, and the competition from abroad in the shape of imported oils and essences is great. The "manufacturing perfumers," or those whose speciality is to convert these substances into the varied forms which enter into domestic consumption, chiefly centre in London and Paris. The number of establishments of this character in London is between forty and fifty, and in Paris there are twice as many. The manufacture of fancy soaps is a leading feature. The United States have for a long time been profitable customers, but of late a high tariff imposes conditions before unknown, and which, in process of time, are likely to effect great changes. Among American cities, Philadelphia has taken the lead in this department of enterprise, several manufacturing firms having invested largely, and from these have originated numerous offshoots of less consequence, but which contribute, in the aggregate, perfumes, soaps, and other toilet goods, considerable in amount. New York has four heavy firms which enjoy a wide reputation for this description of goods. Colgate & Co., last year consumed oils and essences in their business to the extent of several thousand dollars. Lanman & Kemp manufacture some thousands of gallons of Florida water, chiefly for the South American trade, and others might be mentioned.

It will not be strange if eventually flower farming in this country lends its enchantment to the landscape and its odors to the breeze, though at this rudimentary stage of the business, it is difficult to compete with the cheap labor and more propitious climate of southern Europe.—*Tribune.*

THE COST OF NEW PLANTS.—It is something fearful to contemplate the price these plants cost. I do not mean the guinea and a half you gave for that new medinilla, nor even the $20 you gave for that splendid mass of a new orchid; no, I mean the price in men's lives. It is worth while to think, as for the first time you contemplate a plan, which has just gained the gold medal, what the man had to go through who sent it home to increase your pleasure and mine. He stood face to face with death for months —for years, perhaps; with death in all its most terrible forms. He could, it may be, count his attacks of fever by the score, like Livingstone, and calmly write home to his friends that he was just recovering from his forty-eighth attack. He may have been in peril from wild beasts of all descriptions, and dependent for the supply of his daily wants upon natives, scarcely, if at all, less ferocious than the wild animals. His home was a hut built with a few branches in the depth of a primeval forest; or he swung his hammock between two trees, and slept there, with the sky for the only roof that covered him. What he found to live upon we had better not inquire. One collector told me he was obliged for weeks to strain every drop of water he drank through the only fragment of a shirt he had left. You may safely set these men down as 'total abstainers,' if you expand the meaning of the term so as to include not only those who drink no intoxicating beverage, but who also abstain totally from all the so-called comforts of life. Perhaps the greatest comfort one living in a foreign land can enjoy is to receive a letter and a newspaper from home, but Sir Rowland Hill's emissaries do not traverse the districts into which the botanical collector has to penetrate, and so even this pleasure is denied him. Very many botanical collectors have died far away from any civilized spot; a long list of these victims could be given, their only monument being the plants which they have introduced.—*Hibberd's Gardener's Magazine, Eng.*

THE HOMES OF MERRY ENGLAND.—It would seem, from recent inquiry and examination, that the dwellings of a large portion of the laboring rural population of England afford very little, if any, more decent and comfortable accomodation than the miserable tenement abodes which disgrace New York City.

Dr. Hunter was last year commissioned by the Privy Council to inquire into the house accomodations provided for agricultural and other laborers in rural districts. He examined over five thousand different dwellings in various counties, and inquired into the local circumstances of each district. His report has just been published, and we find the following summary of it in the *Pall Mall Gazette*. It is quite mournful and miserable enough that the heterogenous population of all sorts, of natives and foreigners, in our large cities, should be subjected to such physical and moral degradations and demoralizations as exist in the over-crowded and offensive regions which they inhabit. But it is a much sadder and more revolting sight to see the agricultural laborers and the various classes of operatives in the rural district of a great nation, thus herded together in the foulest air and in the most indecent and demoralizing circumstances, while there is plenty of space, and of blessed sunshine, and of pure atmosphere, to which they are indubitably entitled.

Of 5,375 laborers' cottages, Dr. Hunter found that 2,195 contained only one bedroom. On the average there were four persons to each bedroom. The open villages are the favorite investment of cottage speculators, who buy scraps of land, which they crowd as densely as they can with the cheapest of hovels. Dr. Hunter furnishes a lengthy and detailed account of the state of the cottages throughout England; but Mr. Simon, the medical officer of the Privy Council, in his preliminary remarks, indicates some typical cases. In Wrestlingworth, Bedfordshire, Dr. Hunter visited seventeen houses, only four of which had more than one bedroom. The single-roomed

cots contained three adults, with three children; a married pair with six, with five' or with four children. At Dunton, in the same county, Dr. Hunter found six adults, with four children, sleeping in one cottage bedroom, and paying for it £3 10s. a year. Only one cottage out of fourteen visited in the village had two bedrooms. A little outside the village stands a house for which the owner until lately received 25s. a year. "The lower nine inches of the door having gone through sheer rottenness, a few more bricks were ingeniously drawn against it from within after shutting, and a bit of matting hung on the side. Full half of one window was gone, glass and framework too. Here, without furniture, huddled three adults and five children. At Beenham, in Berkshire, he saw a house in which the bedroom had no windows, no fireplace, no door, nor hole, except that in the floor, by which it was entered. The walls lean together, meeting a flat ceiling five feet nine inches in width, and five feet seven inches above the floor. A man lately lived here with two grown-up daughters and a growing son; father and son slept on the bedstead, the girls on the floor." At Tinker's End, near Winslow, a bedroom is reported in which slept four adults with five children, and which measured eleven feet by nine, by six feet five inches at the highest point; another one, eleven feet seven by nine feet by five feet ten contained six persons. Each of these families had less than the allowance necessary to one single convict. No houses had more than one bed-room. In Great Hallingbury, Essex, there were thirty adults and twenty-nine children in twelve small bedrooms; but even this rate was exceeded in Langtoft, Lincolnshire, where in twelve bedrooms were lodged thirty-eight adults and thirty-six children. At Gamlingay, in Cambridgeshire, where a wretched hut not worth £20 can be let for £2 15s. a year, "eight and nine people were found in the single bedroomed houses, and in two cases six adults slept in a room with a child or two." At Madley, in Herefordshire, Dr. Hunter "called at a pair of single bedroomed cots, let by the overseers at £2 a year; in one he found four adults and a child, in the other no less than eight adults with but one sleeping-room. These huts measured externally 12ft. 6in. square!" In Lubenham, Leicestershire, out of thirty-five houses, twenty-two had only one bedroom. In one bedroom lived a married pair, two boys of twenty and eighteen, a girl of seventeen, and a grandchild; in another, a married pair with five children; in another, six adults, with two children; in another, a widower, his two sons, his two daughters, and their two natural children. Again, at Stratton, Wiltshire, seven adults and one child slept in a single apartment. These are by no means exaggerated or extreme cases. They are only such as may be matched in any two or three pages of Dr. Hunter's long report, and may be taken as fairly illustrative of cottage life in England. To comment upon such cases, to point out the moral as well as physical evils which are inevitably engendered by a domestic existence passed in defiance of all the laws of health and all the rules of merest decency, would be superfluous.

BOOKS RECEIVED.

SERMONS PREACHED IN BOSTON ON THE DEATH OF ABRAHAM LINCOLN, together with the funeral services at Washington. Published by J. E. Tilton & Co., Boston, price $2.00. This book, issued in an elegant and appropriate style, is one that should find a place in every library. A memorial of a prominent tragic event, and of the pulpit eloquence of the day.

MESSRS. TICKNOR & FIELDS have commenced the publication of a handsome series of Illustrated Books, in paper covers; the first number of which is "Household Poems," by LONGFELLOW, being a collection of many of his most admired verses, handsomely printed and beautifully illustrated; "Songs for all Seasons," from TENNYSON, will make the second number of the "Companion Poets for the People."